

What is claimed is:

1. A method for forming a film by casting a ribbon on a support from a flow cast die while pulling said ribbon toward
5 said support by providing a decompression area, said decompression area having at least a middle portion, a left portion and a right portion, said method satisfying the following formulae:

$$0 < (PC-PL) \times 100 / |PC| < 15;$$

10 $0 < (PC-PR) \times 100 / |PC| < 15;$

$$|PL-PR| \times 100 / |0.5(PL+PR)| < 10;$$

wherein PC is a degree of decompression in said middle portion, PL a degree of decompression in said left portion, and PR a degree of decompression in said right portion.

15 2. A method as claimed in claim 1, wherein said decompression area is produced by use of a decompression device;

wherein said decompression device is comprised of an outer seal extended in a direction parallel to a lateral direction of said ribbon, an inner seal provided in parallel
20 to said outer seal with a certain interval, a pair of lateral end seals attached to both lateral end portion of said inner seal, inner side seals provided between said lateral end seals, a seal plate fixed on upper ends of said lateral end seals and said inner side seals, a pair of seal openings each of which
25 is formed through said inner seal between said lateral side seal and said inner side seal; and

wherein said degrees of decompression PC, PL, PR are changed by varying the size of said seal openings.

3. A method as claimed in claim 2, wherein said lateral end seal has a thickness of 3-10 mm, said method satisfying the following formulae:

$$L < (t/2) - 0.5 \text{ mm};$$

5 $|LL - LR| < 1.0 \text{ mm};$

wherein L is a length from an lateral end of a nozzle of said flow cast die to a center line of said lateral end seal with respect to a direction perpendicular to a casting direction, LL is a length from said center line to a left edge of said nozzle, and LR is a length from said center line to a right edge of said nozzle.

4. A method as claimed in claim 2, satisfying the following formula:

$$0.01 < (S1/S2) < 0.1;$$

15 wherein S1 is an area of a first gap below said nozzle that is surround by said ribbon, said support, said lateral end seal or said inner side seal, and a perpendicular line to said support from a front end of said lateral end seal or said inner side seal; and

20 wherein S2 is an area of a second gap that is surrounded by said support, said perpendicular line, a bottom edge of said lateral end seal or said inner side seal, a line from a bottom end of said inner seal to a bottom end of said outer seal, and a line extended from an outer edge of said outer seal to said support.

25 5. A method as claimed in claim 4, wherein a suction tube of said decompression device has a tube opening to increase said area S2 substantially.

6. A method as claimed in claim 2, wherein a pair of side decompression areas are provided in the vicinity of both lateral end portions of said ribbon; and

wherein said side decompression area being surrounded by a vertical line to said support from said nozzle, said ribbon and said support, and suppresses turbulence in end portions of said ribbon which is caused by decompression by use of said decompression device.

7. A method as claimed in claim 2 wherein a clearance C1 between said support and the lower end of said lateral end seal is more than 0.1 mm and less than 1.2 mm; and

wherein an error of said clearance C1 is within ± 1.0 mm.

8. A method as claimed in claim 2, wherein a clearance C2 between said nozzle of said die and the front end of said lateral end seal with respect to a casting direction of said ribbon is equal to or less than 0.5 mm.

9. A method as claimed in claim 2, wherein a second packing is provided between said seal plate and said flow cast die, and a second packing is provided between said flow cast die and said lateral end seal.

10. A method as claimed in claim 2, wherein said inner side seal and said lateral end seal are tightly attached to said inner seal and said seal plate.

11. A method as claimed in claim 10, wherein said degree of decompression in said middle area is -1471 to -0.98 Pa.

12. A method as claimed in claim 11, wherein said ribbon is made from a solution which includes equal to or more than 10 % wt. cellulose acylate.

13. A method as claimed in claim 12, wherein said cellulose acylate is cellulose triacetate.

14. A method as claimed in claim 13, wherein a solvent for solving said cellulose triacetate solution includes 20-90 wt. % methyl acetate, 5-60 wt. % ketones, and 5-30 wt. % alcohols.

15. A method as claimed in claim 12, wherein said solution includes at least one kind of plasticizer, an amount of said plasticizer being 0.1-20 wt. % to the amount of cellulose acylate.

10 16. A method as claimed in claim 12, wherein said solution includes at least one kind of ultraviolet ray absorbent, an amount of said ultraviolet ray absorbent being 0.001-5 wt. % to the amount of cellulose acylate.

15 17. A method as claimed in claim 12, wherein said solution includes at least one kind of finely divided powder, an amount of said finely divided powder being 0.001-5 wt. % to the amount of cellulose acylate.

18. A method as claimed in claim 12, wherein said solution includes at least one kind of release agent, an amount of said release agent being 0.002-2 wt. % to the amount of cellulose acylate.

19. A method as claimed in claim 12, wherein said solution includes at least one kind of fluorosurfactant, an amount of said fluorosurfactant being 0.001-2 wt. % to cellulose acylate.

25 20. A method as claimed in claim 12, wherein two or more kinds of solutions including cellulose acylate are applied on said support at the same time.

21. A method as claimed in claim 2, wherein said lateral end seal has a thickness of 3-10 mm, said method satisfying the following formulae:

$$L < (t/2) - 0.5 \text{ mm};$$

5 $|LL - LR| < 1.0 \text{ mm};$

$$0.01 < (S1/S2) < 0.1;$$

wherein L is a length from an end of a nozzle of said flow cast die to a center line of said lateral end seal with respect to a direction perpendicular to a casting direction of said ribbon, LL is a length from said center line to a left edge of said nozzle 21, and LR is a length from said center line to a right edge of said nozzle;

wherein S1 is an area of a first gap below said nozzle that is surround by said ribbon, said support, said lateral end seal or said inner side seal, and a perpendicular line to said support from a front end of said lateral end seal or said inner side seal, and S2 is an area of a second gap that is surrounded by said support, said perpendicular line, a bottom edge of said lateral end seal or said inner side seal, a line from a bottom end of said inner seal to a bottom end of said outer seal, and a line extended from an outer edge of said outer seal to said support; and

wherein a clearance C1 between said support and the lower end of said lateral end seal is more than 0.1 mm and less than 1.2 mm, an error of said clearance C1 is within ± 1.0 mm, and a clearance C2 between said nozzle of said die and the front end of said lateral end seal with respect to a casting direction of said ribbon is equal to or less than 0.5 mm.

22. A method as claimed in claim 21, wherein a pair of side decompression areas are provided in the vicinity of both lateral end portions of said ribbon; and

wherein said side decompression area being surrounded by a vertical line to said support from said nozzle, said ribbon and said support, and suppresses turbulence in end portions of said ribbon which is caused by decompression by use of said decompression device.

23. A method as claimed in claim 22, wherein said degree of decompression in said middle area is -1471 to -0.98 Pa.

24. A method as claimed in claim 23, wherein said ribbon is made from a solution including equal to or more than 10 wt. % cellulose triacetate, said solution being solved in a solvent including 20-90 wt. % methyl acetate, 5-60 wt. % ketones, and 5-30 wt. % alcohols.

25. A method as claimed in claim 24, wherein said solution includes at least one kind of plasticizer of 0.1-20 wt. % to cellulose triacetate, at least one kind of ultraviolet ray absorbent of 0.001-5 wt. % to cellulose triacetate, at least one kind of finely divided powder of 0.001-5 wt. % to cellulose triacetate, at least one kind of release agent of 0.002-2 wt. % to cellulose triacetate, and at least one kind of fluorosurfactant of 0.001-2 wt. % to cellulose triacetate.

26. A method as claimed in claim 25, wherein two or more kinds of solutions including cellulose triacetate are applied on said support at the same time.

27. A film formed by a method in claim 26 such that a thickness of said film is 20-120 μ m.

28. A polarizing plate protection film formed by use of a film claimed in claim 27.

29. A polarizing plate formed in use of a film claimed in claim 27.

5 30. An optical functional film formed by use of a film claimed in claim 27.

31. A liquid crystal display device formed by use of a film claimed in claim 27.